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Measurement of the transverse momentum spectra of weak vector bosons produced in proton-proton collisions at $\sqrt{s}=8$ TeV (Article)

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Abstract

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The transverse momentum spectra of weak vector bosons are measured in the CMS experiment at the LHC. The measurement uses a sample of proton-proton collisions at $s=8$ TeV, collected during a special low-luminosity running that corresponds to an integrated luminosity of $18.4 \pm 0.5 \text{ pb}^{-1}$. The production of W bosons is studied in both electron and muon decay modes, while the production of Z bosons is studied using only the dimuon decay channel. The ratios of W^- to W^+ and Z to W differential cross sections are also measured. The measured differential cross sections and ratios are compared with theoretical predictions up to next-to-next leading order in QCD. [Figure not available: see fulltext.] © 2017, The Author(s).

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Hadron-Hadron scattering (experiments) QCD

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